TECHNICAL DATA SHEET

VERSION 1.1
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Resin
smart materials 3D

DENTAL HD



Photopolymer resins for 3D printing for technical use, suitable for manufacturing by means of LCD, DLP and SLA type printers, it maintains great dimensional stability, low shrinkage and low odor during printing.

Indicated for open-source printing equipment, in the range of 385 – 420 nm.

DENTAL HD is a completely matte beige photopolymer developed for the dental sector. Its great dimensional stability and low shrinkage allows making pieces with great precision. The matte finish enhances all the details of the model allowing a perfect visualization on cuts and markers.

Recommended applications

- High precision models
- Models for the reconstruction of crowns and bridges.
- Making of dental models.
- Making of molds for thermoforming.
- Aligners.

	TIPICAL VALUE	UNITS	TEST METHOD
PHYSYCAL PROPERTIES			
Aparience	Beige opaque liquid		
Density	1,18	g/cm^3	ISO 1183
Viscosity (25˚C)	700	cps	
MECHANICAL PROPERTIES (Values obtained after 30 minutes of UV curing)			
Tensile Strength	37	MPa	ASTM D638M
Tensile Module	1900	MPa	ASTM D638M
Flexion Strenght	64	MPa	ASTM D790M
Flexion Module	1700	MPa	ASTM D2240
Elongation at break	5	%	ASTM D638M
IZOD Impact (notched, 23˚C)	31	J/m	ASTM D256A
Hardness	85	Shore D	ASTM D2240
Linear shrinkage (during printing)	0,3	%	
Linear shrinkage (during UV curing)	0,4	%	

PRINTING PROPERTIES [1]	LCD	LCD mono	UNITS
Layer height	0,05	0,05	mm
Base Layer	2	2	number
Exposure time base layer	80	40	seconds
Exposure time	15	4	seconds

[1] General printing parameters for a layer height of 25 µm, each printing equipment may require modifications in the settings, for more information about the configuration in a specific model, write to us at the following email: info@smartmaterials3d.com

SIZE	NET WEIGHT	GROSS WEIGHT	COLOR	PACKAGING
M	500 g	550 g	Beige, mate	Cardboard Box, Black PE bottle, zip lock bag.

USE RECOMENDATIONS

SHAKE PRODUCT BEFORE USING



The composition of the resin can contain suspended particles, over time these can end up precipitating at the bottom of the container, so it is advisable to shake the container before use so that the product mixes again and is completely homogeneous.

RECOMMENDED LAYER HEIGHT



This resin is suitable for working with a layer height according to the indicated range. Layer height is directly related to print resolution so a lower layer height is recommended to achieve a higher quality finish.

RECOMMENDED PRINTING EQUIPMENT



Smart Materials 3D Resin Standard Black has been validated for 3D printing technologies using LCD, DLP and SLA equipment.

SUITABLE FOR THE DENTAL SECTOR



Very low linear shrinkage resin indicated for the reproduction of pieces and models intended for the dental sector. The matte surface improves the visualization and depth of the models, highlighting all the details of the piece.

TEMPERATURE



For a correct print, it is recommended to keep the bottle between temperatures of 15 to 30˚C.

DISCLAIMER: The information provided in the data sheets is intended to be just a reference. It should not be used as design or quality control values. Actual values may differ significantly depending on the printing conditions. The final performance of the printed components does not only depend on the materials, also the design and printing conditions are important.
Smart Materials assumes no responsibility for any damage, injury or loss produced by the use of its filaments in any particular application.